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IS 15857 (2009): Cotton seed delinting machinery - Mobile-charging machine [FAD 20: Agriculture and Food Processing Equipments]

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कॉटन सीड डीलिन्टिंग मशीनरी — मोबाइल आवेमन मशीन — विशिष्टि

Indian Standard

COTTON SEED DELINTING MACHINERY — MOBILE-CHARGING MACHINE — SPECIFICATION

ICS 65.060

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

June 2009 **Price Group 2**

Agriculture and Food Processing Equipments Sectional Committee, FAD 20

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Agriculture and Food Processing Equipments Sectional Committee had been approved by the Food and Agriculture Division Council.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the results of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

COTTON SEED DELINTING MACHINERY — MOBILE-CHARGING MACHINE — SPECIFICATION

1 SCOPE

This standard specifies material, performance and constructional and other requirements of mobile charging machine.

2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
1364	Hexagon head bolts, screws and nuts of product grades A and B
(Part 1) : 2002/ ISO 4014 : 1999	Hexagon head bolts (size range M 1.6 to M 64) (*fourth revision*)
(Part 2) . 2002/ ISO 4017 : 1999	Hexagon head screws (size range M 1.6 to M 64) (*fourth revision*)
(Part 3) : 2002/ ISO 4032 : 1999	Hexagon nuts, style 1 (size range M 1.6 to M 64) (*fourth revision*)
(Part 4) : 2003/ ISO 4035 : 1999	Hexagon thin nuts (chamfered) (size range M 1.6 to M 64) (*fourth revision*)
(Part 5) : 2002/ ISO 4036 : 1999	Hexagon thin nuts - Product grade B (unchamfered) (size range M 1.6 to M 10) (*fourth revision*)
(Part 6) : 2002/ ISO 4033 : 1999	Hexagon nuts, style 2
2015 : 1977	Specification for T-nuts (*first revision*)
2062 : 2006	Hot rolled low, medium and high tensile structural steel (*sixth revision*)
2403 : 1991/ ISO 606 : 1982	Short pitch transmission precision roller chains and chain wheels (*second revision*)
5624 : 1993	Foundation bolts – Specification (*first revision*)

3 TERMINOLOGY

For the purpose of this standard following definitions shall apply.

3.1 Body — The body of the machine is made out of MS sheet, angles and channels.

3.2 Dried Seed — This is fuzzy seed, which is received from preheating machine.

3.3 Fuzzy Seed — The cotton seed left over after separation of lint from seed cotton (*KAPAS*) by ginning operation. The cotton seed contains bollworm-affected seed, cut seed, inert matter, trash, oversize and undersize seed, which is not free flowing.

3.4 Mobile Charging Machine — The mobile charging machine with seed container mounted on rails moving to and fro raised platform of structural steel for receiving and discharging of preheated fuzzy seeds. The mobile charging machine has built in conveying, weighing, and agitating and distribution system. Mild steel material body with wheel made of mild steel with horizontal screw. This machine receives fuzzy seed from preheating machine and weighs the seed and transfer the seed to delinting machine. The weighing system of electronic load cell with LED display is fixed.

3.5 Screw Conveying System — This operation is provided for transferring the fuzzy seed, which is temporarily held in the container to the delinting machine. This screw is rotated by providing the power through the motor of standard make, which rotate the screw. The screw conveyor is projected outward to discharge the seed into delinting machine.

3.6 Weighing System — This system is provided for weighing the fuzzy seed, which is transferred to the delinting machine so as to know about the gas requirement, which is required for delinting of the seed. This machine is provided with four eccentric loadcell and sensor or electro-mechanical weighing balance with LED display.

4 MATERIALS

The material of construction of mobile charging machine shall be given in the references. The material may conform to the relevant Indian Standard in Table 1.

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Table 1 Material of Construction of Mobile Charging Machine

(*Clause* 4)

Sl No.	Component	Material	Ref to IS No.
(1)	(2)	(3)	(4)
i)	Body	MS sheet	2062
ii)	Legs	MS channel	2062
iii)	Screw	MS sheet	2062
iv)	Screw shaft	MS material	2062
v)	Screw flight	MS sheet	2062
vi)	Sprocket	Carbon steel	2403
vii)	Chain	Steel	2403
viii)	Foundation bolt	Steel	5624
ix)	Hexa nut and bolt	Steel	1364 (Parts 1 to 6)
x)	Circup	Steel	2015
xi)	Electronic load cell	Steel	—
xii)	LED display	—	—

5 PERFORMANCE REQUIREMENTS

Mobile charging machine when tested with the method, shall conform to the requirement given in Annex A.

6 CONSTRUCTIONAL REQUIREMENT

The sheets, channels and angels used in the construction of mobile charging machine shall depend on the capacity of the machine. The thickness of MS sheet vary from 3 mm, 5 mm, 8 mm and angles size 25 mm × 25 mm, 35 mm × 35 mm, 50 mm × 50 mm and channels 150 mm × 75 mm, 200 mm × 100 mm. The electronic load cell should be concealed to avoid corrosion due to HCL gas.

7 OTHER REQUIREMENTS

7.1 The necessary bearing, chain sprocket and power drive shall be provided.

7.2 The necessary provision of greasing, oiling for bearings shall be provided.

7.3 The construction shall be such as to help easy repairs and maintenance.

7.4 The machine shall be provided with easy facilities for adjustments.

7.5 The screw conveyor should rotate freely and should not crush fuzzy seed.

7.6 The dynamic balance of seed container is crucial for accurate weighment.

8 WORKMANSHIP AND FINISH

8.1 The components of the machine shall be free from cracks and other visual defects.

8.2 The welding and joints, if any shall not be porous and shall be smooth.

8.3 The corrosion preventing coating shall be provided to the body such as FRP lining 2 mm thick.

8.4 The control and adjustment provided shall be easy and operating smoothly.

8.5 For smooth finish of FRP coated surfaces two coats of resin should be applied.

9 MARKING AND PACKING

9.1 Marking

Each mobile charging machine shall be marked with the following particulars:

a) Manufacturer's name and address;
b) Type and model number;
c) Power rating;
d) Drive details;
e) Batch or code number, if any; and
f) Year of manufacture.

9.1.1 Each mobile charging machine may also be marked with the overall size and approximate weight of machine or this information may be given in the catalogue supplied by the manufacturer.

9.2 BIS Certification Marking

Each mobile charging machine may also be marked with the Standard Mark.

9.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the license for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

9.3 Packing

The packing of mobile charging machine shall be done as agreed to between the supplier and the purchaser.

ANNEX A

(*Clause* 5)

METHODS OF TEST FOR MOBILE CHARGING MACHINE

A-1 RUNNING IN AND PRELIMINARY ADJUSTMENTS

A-1.1 The mobile charging machine shall be installed on levelled preferably on hard surface.

A-1.2 The mobile charging machine shall be run in for about 30 min before commencing the test. All the adjustments shall be carried out in accordance with the recommendations of the manufacturers.

A-2 TEST AT NO LOAD

The mobile charging machine shall be run at 'no load' for 10 min at the specific speed. During and after the no load run the visual observation at the mobile charging machine shall not show the following:

a) Presence of any marked vibration during the operation.
b) Presence of undue knocking sound or rattling sound.
c) Any marked rise in the bearing temperature.
e) Any marked unusual wear or slackness in any component.

A-3 TEST AT LOAD

The mobile charging machine shall be operated at its input capacity specified by the manufacturer incorporating best combination of adjustment for a period of 30 min. During the running period RPM of screw shall be noted.

A-4 LONG RUN TEST

The mobile charging machine shall be operated for a minimum of 20 h duration. During and after the operation no break down or defects shall develop in the mobile charging machine.

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Amendments Issued Since Publication

Amendment No.	Date of Issue	Text Affected

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